

project characteristics, and the transportation operations and safety strategies identified by the State.

(3) The PI component of the TMP shall include communications strategies that seek to inform affected road users, the general public, area residences and businesses, and appropriate public entities about the project, the expected work zone impacts, and the changing conditions on the project. This may include traveler information strategies. The scope of the PI component should be determined by the project characteristics and the public information and outreach strategies identified by the State. Public information should be provided through methods best suited for the project, and may include, but not be limited to, information on the project characteristics, expected impacts, closure details, and commuter alternatives.

(4) States should develop and implement the TMP in sustained consultation with stakeholders (e.g., other transportation agencies, railroad agencies/operators, transit providers, freight movers, utility suppliers, police, fire, emergency medical services, schools, business communities, and regional transportation management centers).

(c) The Plans, Specifications, and Estimates (PS&Es) shall include either a TMP or provisions for contractors to develop a TMP at the most appropriate project phase as applicable to the State's chosen contracting methodology for the project. A contractor developed TMP shall be subject to the approval of the State, and shall not be implemented before it is approved by the State.

(d) The PS&Es shall include appropriate pay item provisions for implementing the TMP, either through method or performance based specifications.

(1) For method-based specifications individual pay items, lump sum payment, or a combination thereof may be used.

(2) For performance based specifications, applicable performance criteria and standards may be used (e.g., safety performance criteria such as number of crashes within the work zone; mobility performance criteria such as travel

time through the work zone, delay, queue length, traffic volume; incident response and clearance criteria; work duration criteria).

(e) *Responsible persons.* The State and the contractor shall each designate a trained person, as specified in § 630.1008(d), at the project level who has the primary responsibility and sufficient authority for implementing the TMP and other safety and mobility aspects of the project.

§ 630.1014 Implementation.

Each State shall work in partnership with the FHWA in the implementation of its policies and procedures to improve work zone safety and mobility. At a minimum, this shall involve an FHWA review of conformance of the State's policies and procedures with this regulation and reassessment of the State's implementation of its procedures at appropriate intervals. Each State is encouraged to address implementation of this regulation in its stewardship agreement with the FHWA.

§ 630.1016 Compliance date.

States shall comply with all the provisions of this rule no later than October 12, 2007. For projects that are in the later stages of development at or about the compliance date, and if it is determined that the delivery of those projects would be significantly impacted as a result of this rule's provisions, States may request variances for those projects from the FHWA, on a project-by-project basis.

Subpart K—Temporary Traffic Control Devices

AUTHORITY: 23 U.S.C. 109(c) and 112; Sec. 1110 of Pub. L. 109-59; 23 CFR 1.32; and 49 CFR 1.48(b).

SOURCE: 72 FR 68489, Dec. 5, 2007, unless otherwise noted.

§ 630.1102 Purpose.

To decrease the likelihood of highway work zone fatalities and injuries to workers and road users by establishing minimum requirements and providing guidance for the use of positive protection devices between the

work space and motorized traffic, installation and maintenance of temporary traffic control devices, and use of uniformed law enforcement officers during construction, utility, and maintenance operations, and by requiring contract pay items to ensure the availability of funds for these provisions. This subpart is applicable to all Federal-aid highway projects, and its application is encouraged on other highway projects as well.

§ 630.1104 Definitions.

For the purposes of this subpart, the following definitions apply:

Agency means a State or local highway agency or authority that receives Federal-aid highway funding.

Exposure Control Measures means traffic management strategies to avoid work zone crashes involving workers and motorized traffic by eliminating or reducing traffic through the work zone, or diverting traffic away from the work space.

Federal-aid Highway Project means highway construction, maintenance, and utility projects funded in whole or in part with Federal-aid funds.

Motorized Traffic means the motorized traveling public. This term does not include motorized construction or maintenance vehicles and equipment within the work space.

Other Traffic Control Measures means all strategies and temporary traffic controls other than Positive Protection Devices and Exposure Control Measures, but including uniformed law enforcement officers, used to reduce the risk of work zone crashes involving motorized traffic.

Positive Protection Devices means devices that contain and/or redirect vehicles and meet the crashworthiness evaluation criteria contained in National Cooperative Highway Research Program (NCHRP) Report 350, Recommended Procedures for the Safety Performance Evaluation of Highway Features, 1993, Transportation Research Board, National Research Council. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. This document is available for inspection and copying at FHWA, 1200 New Jersey Av-

enue, SE., Washington, DC 20590, as provided in 49 CFR part 7. You may also inspect a copy at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741 6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Work Zone Safety Management means the entire range of traffic management and control and highway safety strategies and devices used to avoid crashes in work zones that can lead to worker and road user injuries and fatalities, including Positive Protection Devices, Exposure Control Measures, and Other Traffic Control Measures.

§ 630.1106 Policy and procedures for work zone safety management.

(a) Each agency's policy and processes, procedures, and/or guidance for the systematic consideration and management of work zone impacts, to be established in accordance with 23 CFR 630.1006, shall include the consideration and management of road user and worker safety on Federal-aid highway projects. These processes, procedures, and/or guidance, to be developed in partnership with the FHWA, shall address the use of Positive Protection Devices to prevent the intrusion of motorized traffic into the work space and other potentially hazardous areas in the work zone; Exposure Control Measures to avoid or minimize worker exposure to motorized traffic and road user exposure to work activities; Other Traffic Control Measures including uniformed law enforcement officers to minimize work zone crashes; and the safe entry/exit of work vehicles onto/from the travel lanes. Each of these strategies should be used to the extent that they are possible, practical, and adequate to manage work zone exposure and reduce the risks of crashes resulting in fatalities or injuries to workers and road users.

(b) Agency processes, procedures, and/or guidance should be based on consideration of standards and/or guidance contained in the Manual on Uniform Traffic Control Devices (MUTCD) and the AASHTO Roadside Design

Guide, as well as project characteristics and factors. The strategies and devices to be used may be determined by a project-specific engineering study, or determined from agency guidelines that define strategies and approaches to be used based on project and highway characteristics and factors. The types of measures and strategies to be used are not mutually exclusive, and should be considered in combination as appropriate based on characteristics and factors such as those listed below:

- (1) Project scope and duration;
- (2) Anticipated traffic speeds through the work zone;
- (3) Anticipated traffic volume;
- (4) Vehicle mix;
- (5) Type of work (as related to worker exposure and crash risks);
- (6) Distance between traffic and workers, and extent of worker exposure;
- (7) Escape paths available for workers to avoid a vehicle intrusion into the work space;
- (8) Time of day (e.g., night work);
- (9) Work area restrictions (including impact on worker exposure);
- (10) Consequences from/to road users resulting from roadway departure;
- (11) Potential hazard to workers and road users presented by device itself and during device placement and removal;
- (12) Geometrics that may increase crash risks (e.g., poor sight distance, sharp curves);
- (13) Access to/from work space;
- (14) Roadway classification; and
- (15) Impacts on project cost and duration.

(c) Uniformed Law Enforcement Policy. Each agency, in partnership with the FHWA, shall develop a policy addressing the use of uniformed law enforcement on Federal-aid highway projects. The policy may consist of processes, procedures, and/or guidance. The processes, procedures, and/or guidance should address the following:

- (1) Basic interagency agreements between the highway agency and appropriate law enforcement agencies to address work zone enforcement needs;
- (2) Interaction between highway and law-enforcement agency during project planning and development;

(3) Conditions where law enforcement involvement in work zone traffic control may be needed or beneficial, and criteria to determine the project-specific need for law enforcement;

(4) General nature of law enforcement services to be provided, and procedures to determine project-specific services;

(5) Appropriate work zone safety and mobility training for the officers, consistent with the training requirements in 23 CFR 630.1008(d);

(6) Procedures for interagency and project-level communications between highway agency and law enforcement personnel; and

(7) Reimbursement agreements for law enforcement service.

§ 630.1108 Work zone safety management measures and strategies.

(a) *Positive Protection Devices.* The need for longitudinal traffic barrier and other positive protection devices shall be based on an engineering study. The engineering study may be used to develop positive protection guidelines for the agency, or to determine the measures to be applied on an individual project. The engineering study should be based on consideration of the factors and characteristics described in section 630.1106(b). At a minimum, positive protection devices shall be considered in work zone situations that place workers at increased risk from motorized traffic, and where positive protection devices offer the highest potential for increased safety for workers and road users, such as:

- (1) Work zones that provide workers no means of escape from motorized traffic (e.g., tunnels, bridges, etc.);
- (2) Long duration work zones (e.g., two weeks or more) resulting in substantial worker exposure to motorized traffic;
- (3) Projects with high anticipated operating speeds (e.g., 45 mph or greater), especially when combined with high traffic volumes;
- (4) Work operations that place workers close to travel lanes open to traffic; and
- (5) Roadside hazards, such as drop-offs or unfinished bridge decks, that will remain in place overnight or longer.

(b) *Exposure Control Measures.* Exposure Control Measures should be considered where appropriate to avoid or minimize worker exposure to motorized traffic and exposure of road users to work activities, while also providing adequate consideration to the potential impacts on mobility. A wide range of measures may be appropriate for use on individual projects, such as:

- (1) Full road closures;
- (2) Ramp closures;
- (3) Median crossovers;
- (4) Full or partial detours or diversions;
- (5) Protection of work zone setup and removal operations using rolling road blocks;
- (6) Performing work at night or during off-peak periods when traffic volumes are lower; and
- (7) Accelerated construction techniques.

(c) *Other Traffic Control Measures.* Other Traffic Control Measures should be given appropriate consideration for use in work zones to reduce work zone crashes and risks and consequences of motorized traffic intrusion into the work space. These measures, which are not mutually exclusive and should be considered in combination as appropriate, include a wide range of other traffic control measures such as:

- (1) Effective, credible signing;
- (2) Changeable message signs;
- (3) Arrow panels;
- (4) Warning flags and lights on signs;
- (5) Longitudinal and lateral buffer space;
- (6) Trained flaggers and spotters;
- (7) Enhanced flagger station setups;
- (8) Intrusion alarms;
- (9) Rumble strips;
- (10) Pace or pilot vehicle;
- (11) High quality work zone pavement markings and removal of misleading markings;
- (12) Channelizing device spacing reduction;
- (13) Longitudinal channelizing barricades;
- (14) Work zone speed management (including changes to the regulatory speed and/or variable speed limits);
- (15) Law enforcement;
- (16) Automated speed enforcement (where permitted by State/local laws);
- (17) Drone radar;

(18) Worker and work vehicle/equipment visibility;

(19) Worker training;

(20) Public information and traveler information; and

(21) Temporary traffic signals.

(d) *Uniformed Law Enforcement Officers.* (1) A number of conditions may indicate the need for or benefit of uniformed law enforcement in work zones. The presence of a uniformed law enforcement officer and marked law enforcement vehicle in view of motorized traffic on a highway project can affect driver behavior, helping to maintain appropriate speeds and improve driver alertness through the work zone. However, such law enforcement presence is not a substitute for the temporary traffic control devices required by Part 6 of the MUTCD. In general, the need for law enforcement is greatest on projects with high traffic speeds and volumes, and where the work zone is expected to result in substantial disruption to or changes in normal traffic flow patterns. Specific project conditions should be examined to determine the need for or potential benefit of law enforcement, such as the following:

(i) Frequent worker presence adjacent to high-speed traffic without positive protection devices;

(ii) Traffic control setup or removal that presents significant risks to workers and road users;

(iii) Complex or very short term changes in traffic patterns with significant potential for road user confusion or worker risk from traffic exposure;

(iv) Night work operations that create substantial traffic safety risks for workers and road users;

(v) Existing traffic conditions and crash histories that indicate a potential for substantial safety and congestion impacts related to the work zone activity, and that may be mitigated by improved driver behavior and awareness of the work zone;

(vi) Work zone operations that require brief stoppage of all traffic in one or both directions;

(vii) High-speed roadways where unexpected or sudden traffic queuing is anticipated, especially if the queue forms a considerable distance in advance of the work zone or immediately adjacent to the work space; and

(viii) Other work site conditions where traffic presents a high risk for workers and road users, such that the risk may be reduced by improving road user behavior and awareness.

(2) Costs associated with the provision of uniformed law enforcement to help protect workers and road users, and to maintain safe and efficient travel through highway work zones, are eligible for Federal-aid participation. Federal-aid eligibility excludes law enforcement activities that would normally be expected in and around highway problem areas requiring routine or ongoing law enforcement traffic control and enforcement activities. Payment for the services of uniformed law enforcement in work zones may be included in the construction contract, or be provided by direct reimbursement from the highway agency to the law enforcement agency. When payment is included through the construction contract, the contractor will be responsible for reimbursing the law enforcement agency, and in turn will recover those costs through contract pay items. Direct interagency reimbursement may be made on a project-specific basis, or on a program-wide basis that considers the overall level of services to be provided by the law enforcement agency. Contract pay items for law enforcement service may be either unit price or lump sum items. Unit price items should be utilized when the highway agency can estimate and control the quantity of law enforcement services required on the project. The use of lump sum payment should be limited to situations where the quantity of services is directly affected by the contractor's choice of project scheduling and chosen manner of staging and performing the work. Innovative payment items may also be considered when they offer an advantage to both the highway agency and the contractor. When reimbursement to the law enforcement agency is made by interagency transfer of funds, the highway agency should establish a program-level or project-level budget that is adequate to meet anticipated program or project needs, and include provisions to address unplanned needs and other contingencies.

(e) *Work Vehicles and Equipment.* In addition to addressing risks to workers and road users from motorized traffic, the agency processes, procedures, and/or guidance established in accordance with 23 CFR 630.1006 should also address safe means for work vehicles and equipment to enter and exit traffic lanes and for delivery of construction materials to the work space, based on individual project characteristics and factors.

(f) *Payment for Traffic Control.* Consistent with the requirements of 23 CFR 630.1012, Project-level Procedures, project plans, specifications and estimates (PS&Es) shall include appropriate pay item provisions for implementing the project Transportation Management Plan (TMP), which includes a Temporary Traffic Control (TTC) plan, either through method or performance based specifications. Pay item provisions include, but are not limited to, the following:

(1) Payment for work zone traffic control features and operations shall not be incidental to the contract, or included in payment for other items of work not related to traffic control and safety;

(2) As a minimum, separate pay items shall be provided for major categories of traffic control devices, safety features, and work zone safety activities, including but not limited to positive protection devices, and uniformed law enforcement activities when funded through the project;

(3) For method based specifications, the specifications and other PS&E documents should provide sufficient details such that the quantity and types of devices and the overall effort required to implement and maintain the TMP can be determined;

(4) For method-based specifications, unit price pay items, lump sum pay items, or a combination thereof may be used;

(5) Lump sum payment should be limited to items for which an estimate of the actual quantity required is provided in the PS&E or for items where the actual quantity required is dependent upon the contractor's choice of work scheduling and methodology;

(6) For Lump Sum items, a contingency provision should be included

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such that additional payment is provided if the quantity or nature of the required work changes, either an increase or decrease, due to circumstances beyond the control of the contractor;

(7) Unit price payment should be provided for those items over which the contractor has little or no control over the quantity, and no firm estimate of quantities is provided in the PS&Es, but over which the highway agency has control of the actual quantity to be required during the project;

(8) Specifications should clearly indicate how placement, movement/relocation, and maintenance of traffic control devices and safety features will be compensated; and

(9) The specifications should include provisions to require and enforce contractor compliance with the contract provisions relative to implementation and maintenance of the project TMP and related traffic control items. Enforcement provisions may include remedies such as liquidated damages, work suspensions, or withholding payment for noncompliance.

§ 630.1110 Maintenance of temporary traffic control devices.

To provide for the continued effectiveness of temporary traffic control devices, each agency shall develop and implement quality guidelines to help maintain the quality and adequacy of the temporary traffic control devices for the duration of the project. Agencies may choose to adopt existing quality guidelines such as those developed by the American Traffic Safety Services Association (ATSSA) or other state highway agencies.¹ A level of in-

¹The American Traffic Safety Services Association's (ATSSA) Quality Guidelines for Work Zone Traffic Control Devices uses photos and written descriptions to help judge when a traffic control device has outlived its usefulness. These guidelines are available for purchase from ATSSA through the following URL: http://www.atssa.com/store/bc_item_detail.jsp?productId=1.

Similar guidelines are available from various State highway agencies. The Illinois Department of Transportation "Quality Standards for Work Zone Traffic Control Devices" is available online at <http://dot.state.il.us/workzone/wztcd2004r.pdf>. The Minnesota Department of Transportation "Quality Standards—Meth-

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specion necessary to provide ongoing compliance with the quality guidelines shall be provided.

PART 633—REQUIRED CONTRACT PROVISIONS

Subpart A—Federal-Aid Construction Contracts (Other Than Appalachian Contracts)

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- 633.102 Applicability.
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Subpart B—Federal-Aid Contracts (Appalachian Contracts)

- 633.201 Purpose.
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- 633.203 Applicability of existing laws, regulations, and directives.
- 633.204 Fiscal allocation and obligations.
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- 633.207 Construction labor and materials.
- 633.208 Maintenance.
- 633.209 Notices to prospective Federal-aid construction contractors.
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APPENDIX A TO SUBPART B OF PART 633—TYPES OF CONTRACTS TO WHICH THE CIVIL RIGHTS ACT OF 1964 IS APPLICABLE

APPENDIX B TO SUBPART B OF PART 633—REQUIRED CONTRACT PROVISIONS, APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM AND LOCAL ACCESS ROADS CONSTRUCTION CONTRACTS

APPENDIX C TO SUBPART B OF PART 633—ADDITIONAL REQUIRED CONTRACT PROVISIONS, APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM AND LOCAL ACCESS ROADS CONTRACTS OTHER THAN CONSTRUCTION CONTRACTS

APPENDIX D TO SUBPART B OF PART 633—FEDERAL-AID PROPOSAL NOTICES

ods to determine whether the various traffic control devices are Acceptable, Marginal, or Unacceptable" is available online at <http://www.dot.state.mn.us/trafficeng/otepubl/fieldmanual2007/FM-2007-QualityStandards.pdf>.